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09/423,606	11/12/1999	KAZUTAKA HAYASHI	3114-0025-0X	6947

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11/26/2001

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EXAMINER

NOLAN, SANDRA M

ART UNIT	PAPER NUMBER
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1772

7

DATE MAILED: 11/26/2001

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/423,606

Applicant(s)

HAYASHI ET AL.

Examiner

Sandra M. Nolan

Art Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 05 November 2001.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-21 is/are pending in the application.
- 4a) Of the above claim(s) 7-21 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-3 is/are rejected.
- 7) ☒ Claim(s) 4-6 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 3 and 4. 6) ☐ Other: _____

DETAILED ACTION

Information Disclosure Statement

1. The information disclosure statements submitted on February 4, 200 (Paper No. 3) and May 22, 2001 (Paper No. 4) were considered by the examiner. Copies of the initialed forms PTO 1449 are enclosed.

Election/Restrictions

2. Applicant's election with traverse of Group I in Paper No. 6 (the response of November 5, 2001) is acknowledged. The traversal is on the ground(s) that (1) the Examiner did not follow MPEP guidelines; (2) the Examiner did not apply the standard applied by the International Preliminary Examination Authority (IPEA); and (3) the search of all of the claims would not have imposed a serious burden on the Examiner.

These arguments are not found persuasive because the guidelines used, as set out in the restriction requirement in the October 3, 2001 Office Action (Paper No. 5), do not require that the Examiner show why each group lacks unity with every other group. Rather, they require that a lack of unity may be found when the special technical feature that links the groups—here the coating agents containing metal alkoxide and silicon alkoxide components—can be shown to be known in the art.

Furthermore, the failure of the IPEA to discuss a lack of unity of invention is not binding on the U.S. Examiner. A holding of lack of unity is discretionary with each official that considers the issue.

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Lastly, the seriousness of the search burden imposed by an application is a determination properly made by the Examiner. In this case, the burden of searching all of the claims was deemed to be serious.

3. The requirement is still deemed proper and is therefore made FINAL.
4. Claims 7-21 are withdrawn from further consideration pursuant to 37 CFR 1.142(b), as being drawn to nonelected inventions, there being no allowable generic or linking claim. Applicant timely traversed the restriction (election) requirement in Paper No. 6.

This application contains claims 7-21 drawn to an invention nonelected with traverse in Paper No. 6. A complete reply to the final requirement must include cancellation of nonelected claims or other appropriate action (37 CFR 1.144) See MPEP § 821.01. Claims 1-6 are under consideration in this action.

Specification

5. The abstract of the disclosure is objected to because it exceeds 150 words. Correction is required. See MPEP § 608.01(b).

Objection to Claims

- W/D
6. Claims 4-6 are objected to under 37 CFR 1.75(c) as being in improper form because a multiple dependent claim may not depend upon another multiple dependent claim. See MPEP § 608.01(n). Accordingly, claims 4-6 have not been further treated on the merits.

Claim Rejections - 35 USC § 103

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7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

9. Claims 1-3 are rejected under 35 U.S.C. 103(a) as being unpatentable over Numata et al (US 5,045,751) in view of JP 07331172A (abstract only) and Hanson et al (US 5,328,975).

Numata et al teaches glassy coating layers (col. 2, line 30) that contain polysiloxanes made by polymerizing a trifunctional silicon alkoxide (a.k.a. "alkoxy silane") with a bifunctional silicon alkoxide (col. 3, lines 49-53).

Numata et al does not teach the use of metal alkoxides with polysiloxanes or metal alkoxides with siloxanes of Applicants' formula (1).

JP 07331172A teaches that polysiloxanes derived from alkoxy silanes can be reacted with metal alkoxides to produce humidity resistant, tough and refractive coatings. See the Advantage section of the abstract.

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Hanson et al teaches that metal alkoxides can be reacted with monomeric siloxanes of the formula $R_xSi(OR')_{4-x}$ to yield abrasion resistant, UV absorbent coatings.

See the abstract.

The references are analogous because they all deal with the production of coatings from silicon-based materials.

It would have been obvious to one having ordinary skill in the art at the time that the invention was made to employ the siloxanes of Hanson et al and the metal alkoxides of Hanson et al and JP 07331172A in the coatings of Numata et al in order to produce coatings having the humidity resistance, toughness and refractive properties of the JP 07331172A coatings and the abrasion and UV properties of the Hanson et al coatings.

The motivation to employ the JP 07331172A metal alkoxides in the coatings of Numata et al is found in the Advantage section of the abstract, where the humidity resistance, toughness and refractive properties of the JP 07331172A coatings are discussed. It is deemed desirable to produce coatings having humidity resistance, toughness and refractive properties for use in environments where such properties will protect the coatings and/or the substrates on which they are used.

The motivation to employ the Hanson et al metal alkoxides in the coatings of Numata et al is found in the Hanson et al abstract, where the abrasion and UV properties of the Hanson et al coatings is discussed. It is deemed desirable to produce coatings having abrasion and UV properties in order to protect the substrates to which they are applied from abrading forces and UV radiation.

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The Examiner deems the use of a polymerization initiator, per Applicants' claim 3, in the compositions suggested by the combination of the references to be a matter of engineering choice, depending on the level of polymerization desired in the polysiloxane and/or the products made when they reacted with one or more of the siloxane monomer and the metal alkoxide.

Conclusion

Any inquiry concerning this communication should be directed to the Examiner, Sandra M. Nolan, whose telephone number is 703/308-9545. The Examiner can normally be reached on Monday through Thursday, from 6:30 am to 4:00 pm, Eastern Time.

If attempts to reach the Examiner by telephone are unsuccessful, her supervisor, Harold Pyon, can be reached at 703/308-4251. The general fax number for the art unit is 703/305-5436. The fax number for after final communications is 703/872-9310. The receptionist answers 703/308-0661.



S. M. Nolan
Patent Examiner
Technology Center 1700

SMN/smn
November 13, 2001
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